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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,494	07/23/2003	Venkat Devarajan	124217.00002 (IMAG-0001)	1995
25555 7590 12/28/2007 JACKSON WALKER LLP 901 MAIN STREET SUITE 6000 DALLAS, TX 75202-3797				
EXAMINER HAJNIK, DANIEL F				
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/626,494	DEVARAJAN ET AL.	
	Examiner	Art Unit	
	Daniel F. Hajnik	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-13,19-22,24,26,28,58,61-63,65-68,71 and 72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-13,19-22,24,26,28,58,61-63,65-68,71 and 72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 7, 11-13, 19-22, 24, 58, 61-63, 65-68, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan (NPL Doc, "Automated Recognition of Intersecting Features from 2-D CAD for Collaborative Virtual Prototyping") in view of Jayaram et al. (US Patent 7,149,677 B2, herein referred to as "Jayaram").

As per claim 1, Ganesan teaches the claimed:

1. A method for building a complete three-dimensional ("3-D") model using an application neutral format, as an output that is readable and editable in a 3-D computer-aided-design ("CAD") software system (*in figure 3.1 on page 44, where the figure shows CAD data and a neutral file format which is also an application neutral format and shows 3D CAD data at the bottom*), comprising:
building a plurality of features based on a feature class to give a plurality of built features, wherein the feature class comprises feature geometry, feature constraints, and feature dimensions (*in figure 3.1, where the "Feature Identification System" has feature geometry, feature constraints, and feature dimensions*), wherein the feature constraints are divided into two classes,

and wherein one feature constraint class defines whether the constraint is to an edge or to a point and a definition of the edge or the point (*in section 3.4.1 under the heading "Constraints:" where it states "The cavity starts and ends on the same edge of the bounding box" where this is an edge constraint and where it states "with its coordinates matching the x coordinates of points A3 and B3" where this is a point constraint*);

defining each built feature as a geometric representation of an individual feature type (*in figure 3.1, where a feature library defines build features of individual feature types, also see top of page 47 where the boundary geometry is determined for each individual feature type which is used to build the features*);

ordering the plurality of built features using geometry of up to six orthographic views of the built features, wherein the plurality of built features are ordered consistently with the CAD system's ordering expectations (*in figure 3.1, where the "Hierarchical object-oriented Feature Library" and the "EAD" define the ordering expectations of the built features, figure 3.1 further shows "2D CAD Ortho Views" further the middle part of page 47 states "the features that have now been identified can be assembled to recreate the feature model of the input design"*);

building a 3-D feature-based model based on the ordering of the plurality of built features to give a representation; (*the middle part of page 47 states "the features that have now been identified can be assembled to recreate the feature model of the input design" and the bottom of figure 3.1 where it shows "3D Feature-based CAD" where the assembling is building*).

Ganesan does not explicitly teach the remaining claim limitations.

Jayaram teaches the claimed:

storing the representation in an intermediate binary file format. (col 16, lines 40-41, "the extracted data is stored in a designated metafile format (an intermediate file format)" and col 14, lines 47-50, "First, there is a source to Applicant's model format (an intermediate format) conversion. Secondly, there is Applicant's model to target file conversion". Further, using a binary formatted file is obvious because it is one of the most well recognized and efficient methods for storing computer related information in an organized manner).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Ganesan with Jayaram. Jayaram offers one advantage to the combination (col 3, lines 4-9, "One advantage of the present invention is to provide a novel method and apparatus for computer aided design file translation having a geometric analyzer for CAD file comparison which determines if a translated CAD file (the output, created by the translation) is geometrically identical to the original source CAD file from which it was translated") where this CAD file translation process is achieved through the use of an intermediate file format.

As per claim 6, Ganesan does not explicitly teach the claimed limitations.

Jayaram teaches the claimed:

6. The method of claim 1, wherein the intermediate binary file format comprises a geometry library and a feature library adapted to build the three-dimensional model. (in Table 2 where the reference shows "File Features", also see col 14, lines 28-35 where these features can be features of the model or geometry features).

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan. The motivation of claim 1 is incorporated herein.

As per claim 7, Ganesan teaches the claimed:

7. The method of claim 6, wherein the geometry library comprises geometry classes for two-dimensional entities; three-dimensional entities- line; arc; elliptical arc; polyline; spline; face; points; and vectors (*in the middle of page 46 where the features can include "boundary geometry" and in figures 3.2 and 3.3 where claimed entities are shown in various drawings, the reference teaches of using both 2-D and 3-D model geometry in figure 3.1 where "2D CAD Ortho Views" and "3D Feature-based CAD" models are shown*).

As per claim 11, Ganesan teaches the claimed:

11. The method of claim 1 further comprising independently defining each feature via a three-dimensional coordinate system. (*in figure 3.1 on page 44 where the "3D Feature-based CAD" can have features defined using a three-dimensional coordinate system because the model is a 3D feature based CAD model*).

As per claim 12, Ganesan teaches the claimed:

12. The method of claim 11, wherein the three-dimensional coordinate system contains the data necessary to detect at least one of a following element from a group consisting of: a work plane; a sketch plane; and a face upon which a feature may need to be built. (*in figure 3.2 where the work plane can be the plane on which the object rests, in figure 3.6 which shows sketch planes based on the 2-D views, and in figure 3.2, where it shows some objects can be based upon a face*

of a feature, i.e. one block raised above the face of another block in the "Rectangular boss" example).

As per claim 13, Ganesan teaches the claimed:

13. The method of claim 12, wherein the data comprises at least one of a following element from a group consisting of: plane vectors; an origin of the plane; and an elevation of the plane from a world origin (*in figure 3.2 where the plane vectors can be the lines that make up the object dimensions*).

As per claim 19, Ganesan teaches the claimed:

19. The method of claim 1, wherein the feature constraints are handled via a class that provides at least one of a following action from a group consisting of: defining a constraint type, a constraint data value, and a constraint object; and indicating if the constraint is to an edge or to a point, and a definition of the edge or the point, wherein the indicating is based on a constraint object type (*in section 3.4.1 under the heading "Constraints:" where it states "The cavity starts and ends on the same edge of the bounding box" where this is an edge constraint and where it states "with its coordinates matching the x coordinates of points A3 and B3" where this is a point constraint*).

As per claim 20, Ganesan teaches the claimed:

stored two-dimensional input views via a class, wherein the stored two dimensional input are capable of being used to provide subsequent 3-D model validation. (*in figure 3.1, "2D CAD Ortho Views" and the "Feature Verification System"*).

Ganesan does not explicitly teach the remaining claim limitations.

Jayaram teaches the claimed:

wherein the intermediate binary file format (*col 16, lines 40-41, "the extracted data is stored in a designated metafile format (an intermediate file format)" and col 14, lines 47-50, "First, there is a source to Applicant's model format (an intermediate format) conversion. Secondly, there is Applicant's model to target file conversion"*).

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan. The motivation of claim 1 is incorporated herein.

As per claim 21, Ganesan teaches the claimed:

21. The method of claim 20, wherein each view class contains at least one of a following element from a group consisting of: an array of two-dimensional entities; and a coordinate system associated with the view. (*in figure 3.1, "2D CAD Ortho Views" and in figure 3.5 where two-dimensional entities are used and in section 3.4.1, where these entities have x and y coordinates and thus have a coordinate system associated with the view*).

As per claims 22 and 24, Ganesan does not teach the claimed limitations.

Jayaram teaches the claimed:

22. The method of claim 1, further comprising transferring system specific data through an intermediate binary file based on the ordering of the built features and

24. The method of claim 1 further comprising transferring application specific data through an intermediate binary file based on the ordering of the built features (*col 14, line 66 – col 15, line 2, "In order to facilitate the process of converting from a source file format to Applicant's formats and from Applicant's formats to a target file format, several CAD system specific utilities were developed"* and *col 15, lines 8-11, "determining specific geometric data that is not necessarily provided by the source CAD system, but will be needed in order to generate the equivalent geometry with the target CAD system"* where this specific data can include system specific data and application specific data).

It would have been obvious to one of ordinary skill in the art to use the claimed features with Ganesan in order to make the system more flexible and able to handle more CAD systems with better compatibility.

As per claim 58, Ganesan teaches the claimed:

58. A method for converting a two-dimensional drawing to a complete three-dimensional model, as an output that is readable and editable in a 3-D computer aided-design ("CAD") software system (*in figure 3.1 on page 44 where the "2D CAD Ortho Views" can be converted to a complete CAD 3-D model shown at the bottom of the figure as "3D Feature-based CAD"*), comprising:

(a) inputting the two-dimensional drawing (*towards upper 1/3 of page 45, "The basic input to FlexiCAD is an ASCII DXF file that contains information of the 2-D views"*);

- (b) correcting errors associated with the two-dimensional drawing to give a corrected two dimensional drawing (*in figure 3.1, "Consistency Check and Raster Cleanup System"*);
- (c) using an automated feature detection system to create matched feature loops (*in figure 3.1, "Feature Extraction System" and top of page 46, "Isolate subparts correspond to loops in the 2-D views that do not intersect the outermost loop" where this isolating involves finding matched feature loops*);
- (d) performing a profile analysis and a feature analysis on the matched feature loops (*towards upper middle of page 46, "The extracted feature subparts have to be identified as standard features defined in the feature library"*);
- (e) producing an ordered list of three-dimensional features using geometry of up to six orthographic views of the three-dimensional features, wherein the ordered list of three-dimensional features is ordered consistently with the CAD system's ordering expectations (*in figure 3.1, where the "Hierarchical object-oriented Feature Library" and the "EAD" define the ordering expectations of the built features, figure 3.1 further shows "2D CAD Ortho Views" further the middle part of page 47 states "the features that have now been identified can be assembled to recreate the feature model of the input design"*);
- (h) producing a parametric feature-based three-dimensional model (*the middle part of page 47 states "the features that have now been identified can be assembled to recreate the feature model of the input design"*).

Ganesan does not explicitly teach the remaining claim limitations.

Jayaram teaches the claimed:

(f) writing the ordered list of three-dimensional features to an intermediate binary file format (*col 16, lines 40-41, "the extracted data is stored in a designated metafile format (an intermediate file format)"*);

(g) interfacing the binary file format to a binary file format that is specific for the CAD system (*col 14, lines 47-50, "First, there is a source to Applicant's model format (an intermediate format) conversion. Secondly, there is Applicant's model to target file conversion" where the target file is specific for a particular CAD system. Further, using a binary formatted file is obvious because it is one of the most well recognized and efficient methods for storing computer related information in an organized manner*).

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan. The motivation of claim 1 is incorporated herein.

As per claim 61, Ganesan teaches the claimed:

61. The method of claim 58 further comprising back projecting the three-dimensional model to obtain drawing views associated with a three-dimensional model for the purpose of validating; the three-dimensional model against the two-dimensional drawing (*by teaching of validation in the middle of page 47 to check the model*).

As per claim 62, Ganesan teaches the claimed:

62. The method of claim 61 further comprising overlaying the drawing views on top of the two-dimensional drawing views (*in the middle of page 47 where the back projecting of the views can resulting in the overlay of one view on another*).

As per claim 63, Ganesan teaches the claimed:

63. The method of claim 62 further comprising comparing the views *(in the middle of page 47 where the views are back projected or compared to validate the model)*.

As per claim 65, Ganesan teaches the claimed:

automatically splitting entities in the drawing or in the corrected drawing corresponding to top, front and side views *(in figure 3.6)*.

Ganesan does not explicitly teach any of the remaining claim limitations.

Hazama teaches the claimed:

automatically filtering non-graphical entities, wherein the non-graphical entities include all dimension lines, centerlines, construction lines, hatching, text, title blocks, and borders, *(in col 52, lines 53-58 by teaching of detecting and eliminating text (non-graphical) features for the 2-D drawings and in figure 14B where non-graphical items such as the ones claimed are filtered)*.

performing error checking on the drawing and if errors are found, correcting the errors;
(col 58, lines 20-24, "As such, according to an aspect of the invention, the 3-D clean-up process may include processes and operations for detecting and removing one sided open lines and for detecting and cleaning bendlines and trimming faces". Here, the 3-D clean-up process is checking for errors and correcting any if needed).

Hazama suggests the claimed:

exploding any blocks in the drawing to accumulate indivisible geometric entities (*By teaching of in figure 14A, step S.192 of detecting inside loops, holes, and shapes*). It would have been obvious to one of ordinary skill in the art at the time of invention to use the claimed feature because exploded views provide an excellent way to perform analysis on inside loops, holes, and shapes by spreading apart the pieces. One advantage for utilizing the claimed feature is to more quickly and accurately process the shape data for analysis.

It would have been obvious to one of ordinary skill in the art to use the claimed features with Ganesan in order to improve the quality of the modeled objected by performing a clean-up process first.

As per claims 66-68, Ganesan teaches the claimed:

66. The method of claim 65 further comprising fixing a common origin for each view and

67. The method of claim 66 further comprising translating the entities to the common origin and

68. The method of claim 67 further comprising writing the translated geometric entity data to classes (*in section 3.2.1 on the top of page 53, "All three orthographic views are enclosed each by a rectangular bounding box. The bounding box is generated by starting at a reference point at the lower left comer of the view and tracing a rectangle by locating the maximum values of the x and y coordinates of the entities in that view" where these x and y coordinates can establish a common origin for each view, figure 3.6 shows how the geometry entities can be translated in respect to the views and a common origin*).

As per claim 71, Ganesan teaches the claimed:

71. The method of claim 58, wherein step (c) comprises:

receiving the corrected two-dimensional drawing (*in figure 3.1, "Consistency Check and Raster Cleanup System"*);

performing a subpart extraction of the corrected two dimensional drawing, wherein the subparts are join features including single features or combinations of features and wherein all subparts are extracted (*in figure 3.1, "Feature Extraction System" which includes "Feature Subparts" where single features can be isolated subparts and other features are combinations of subparts*); performing a subpart matching of the corrected two dimensional drawing (*in figure 3.1, "Feature Identification System"*);

extracting nested loops and circular loops (*towards lower middle of page viii, "Feature subparts corresponding to the loops are independently extracted in the 2-D domain"*);

matching the nested loops and circular loops (*item 4 on page 65, "The x coordinates of points A1 and B1 on the loop in the top view match the x coordinates of points A3 and 83"*);

producing matched feature loops (*in figure 3.1 where the "Feature Identification System" produces matched feature loops*).

2. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan in view of Jayaram in further view of Dale (NPL Doc "C++ Plus Data Structures").

As per claim 8, Ganesan does not explicitly teach the claimed limitations.

Dale teaches the claimed:

8. The method of claim 7 further comprising copying data between at least one of the class's private data space and an address of the data specified from a calling function (pg. 344, "*Copy Function*", pg. 345, "*However, Copy does have access to the private data members of its parameters*" where a call function is shown towards the middle of page 344).

It would have been obvious to one of ordinary skill in the art to combine Ganesan, Jayaram, and Dale in order to utilize well-proven and efficient methods of coding with private data spaces and calling functions as taught by Dale.

As per claim 9, Ganesan does not explicitly teach the claimed limitations.

Dale teaches the claimed:

9. The method of claim 8 further comprising, within each class, classifying the data as at least one of a following classification from a group consisting of: fundamental data; and derived data, wherein derived data is any additional information that may be used during the building of the 3-D model (pg. 363 towards top, "*Base class The class being inherited from*" and "*Derived Class The class that inherits*" where the base class is a fundamental data class and where derived data can include additional information associated with a particular class structure in the code to implement the building of the model).

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan in order to utilize well-proven and efficient methods of object-oriented programming in order to organize the data better.

As per claim 10, Ganesan does not explicitly teach the claimed limitations.

Dale teaches the claimed:

10. The method of claim 9 further comprising ensuring, by each of the classes, that any change made to the fundamental data via a function will update the derived data accordingly (*top of page 363, "The derived class inherits all the properties of its base class. In particular, the data and operations defined for the base class are now derived for the derived class" where an update to the base class or fundamental data class with update through inheritance to the derived data class as well"*).

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan. The motivation of claim 9 is incorporated herein.

3. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan in view of Jayaram in further view of Morgenstern (US Patent 5,970,490).

As per claim 26, Ganesan does not explicitly teach the claimed:

Morgenstern teaches the claimed:

26. The method of claim 1, wherein the intermediate binary file format is a binary file of individual features and metadata associated with each feature is created by serializing object data structures of individual features and associated metadata (*col 29, lines 31-37, "Structured files are common as the import and export media of commercial design tools. There are two types of uniform regions for structured files: ASCII and binary regions. ... A binary region consists of values which are 8-bit data (which includes control characters). Both ASCII and binary uniform regions are processed sequentially from left to right" where these binary regions and control*

characters can have metadata to help organize the data and where sequential processing can be serial processing).

It would have been obvious to one of ordinary skill in the art to combine Ganesan, Jayaram, and Morgenstern in order to utilize the well-proven and efficient method of read and writing computer data where this format has wide spread compatibility and flexibility with many existing computer systems.

As per claim 28, Ganesan does not explicitly teach the claimed:

Morgenstern teaches the claimed:

28. The method of claim 1, wherein the binary file format can be incrementally updated.

*(col 29, lines 36-39, "A binary region consists of values which are 8-bit data (which includes control characters). Both ASCII and **binary uniform regions** are **processed sequentially from left to right by the respective type of parser object instance**" where this sequentially processing can be incremental updating).*

It would have been obvious to one of ordinary skill in the art to use the claimed feature with Ganesan. The motivation of claim 26 is incorporated herein.

4. Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ganesan in view of Jayaram in further view of Gadh et al. (US Patent 6,629,065).

As per claim 72, Ganesan teaches the claimed:

72. The method of claim 58, wherein: step (d) comprises:

receiving the matched feature loops (*in figure 3.1, where the "3D Feature-based CAD" module receives matched feature loops*),

performing a profile analysis on each loop match (*in figure 3.10*),

Ganesan does not explicitly teach the remaining claim limitations.

Gadh teaches the claimed:

building feature subtrees, wherein each of the feature subtrees contains necessary data to create a 3-D feature (*in figures 18-21 where subtrees are shown*),

setting a relative volume operation for each of the feature subtrees (*in figures 18 and 19 where the relative volume operations are shown*),

building feature relations on the feature subtrees (*in figure 19 where feature relations are built*);

step (e) comprises:

building a model tree based on the feature relations (*in figures 18-21 where the figures shown the model being built*),

producing a final feature tree based on the model tree to give the ordered list of three dimensional features (*in figures 20B and 21B*).

It would have been obvious to one of ordinary skill in the art to combine Ganesan, Jayaram, and Gadh. Gadh offers one advantage to the combination (*in the abstract, "The underlying geometric representation of the objects within the design tool is optimized so that design activities such as modeling, editing, rendering, etc. can be processed extremely rapidly, thereby enhancing the response time of the design tool"*) where this rapid modeling and rendering can allow the user to correct any mistakes in real-time in a CAD model conversion process.

Response to Arguments

1. Applicant's arguments filed 9/20/2007 have been fully considered but they are not persuasive.

Applicant argues Jayaram's teachings are not applicable (top of page 18 in filed response).

The examiner respectfully maintains that the rejections are proper because Jayaram's clean-up process is applied only for teaching of an intermediate binary file. The actual 2D to 3D conversion process now relies upon the reference of Ganesan in this office action. Further, the teachings of Jayaram are applicable because these teachings deal with 3D CAD models which is also used with Ganesan (i.e. in figure 3.1 of Ganesan where the output of the system is a 3D built model which can be configured with Jayaram).

1. Applicant argues "Morgenstern does not teach the use of an intermediate binary file format for a 3-D parametric model" and argues "Morgenstern does not teach incrementally updating the binary file format" (pages 19-20 in filed response). The examiner respectfully maintains that the rejections are proper because Morgenstern is relied upon for incorporating binary file access features into the combination of references. The binary files in Morgenstern can be incrementally updated by adjusting the control characters. The reference of Ganesan further provides more aspects of the actual 3-D parametric model. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re*

Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues “Hazama very clearly teaches the 'clean-up process' to 'refine the resultant 3-D model' no the 2-D drawings” (upper portion of page 21 in filed response).

The examiner respectfully maintains that the rejections are proper because Hazama does teach a clean-up process of both 2D and 3D drawings or CAD models. For example, see figure 14B of Hazama which cleans up various lines and non-essential features of the 2D drawings.

Applicant argues “Gadh pertains to conversion between 3-D designs only” (lower half of page 25 in filed response).

The examiner respectfully maintains that the rejections are proper because Gadh's graph structures can be incorporated and connected to the output of figure 3.1 in Ganesan. In this office action, Ganesan is relied upon for teaching of providing the three-dimensional feature data. Through the combination, this feature data can be built and organized using the graph structures of Gadh.

Applicant's remaining arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel F. Hajnik whose telephone number is (571) 272-7642. The examiner can normally be reached on Mon-Fri (8:30A-5:00P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka J. Chauhan can be reached on (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/626,494
Art Unit: 2628

Page 21

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D. N.

DFH

Robert Lopez
Primary Examiner
A. U. 2628